

SERVICE MANUAL

X\$ 364

S-2730 / S-2750 Optimum Digital Receiver



Specifications (for 2730)

POWER OUTPUT

Continuous RMS with no more than 0.2% THD
at 8 ohms, 40~20,000Hz 35W
at 8 ohms, 1KHz 40W

INTERMODULATION DISTORTION

60Hz:7KHz=4:1 SMPTE
35W output into 8 ohms 0.2%

DAMPING FACTOR

at 1KHz, 8 ohms 40

INPUT SENSITIVITY

for 35W output 8 ohms at 1KHz

PHONO 2.5mV
AUX 150mV

PHONO PREAMP INPUT OVERLOAD

at 1KHz, 0.2% THD 120mV
at 10KHz, 0.2% THD 570mV

SIGNAL TO NOISE RATIO, IHF

"A" wtd/unwtd
Phono 70/65dB
AUX 95/90dB

FREQUENCY RESPONSE

Phono, RIAA 30-20,000KHz ± 0.5 dB
AUX at 1W, -3dB 5Hz-40KHz

TONE CONTROL

Bass at 100Hz ± 10 dB
Treble at 10KHz ± 10 dB

LOUDNESS CONTOUR

at 100Hz +7dB
at 10KHz +3.5dB

CHANNEL SEPARATION

at AUX input shorted
100Hz 60dB
1KHz 60dB
10KHz 50dB

FM SECTION

Tuning Range USA/Canada/Australia
Version: 87.5-108MHz
Europe Version:
87.50-108.00MHz

Scanning Frequency Interval

(AUTO/MANUAL) USA/Canada/Australia
Version: 0.1MHz
Europe Version: 0.05MHz

Usable Sensitivity IHF

at $S+N+D/N+D=30$ dB $1.9\mu V$ (10.8dBf)
50dB Quieting Sensitivity, Stereo $50\mu V$ (39.2dBf)

THD at 1KHz, 100% MOD

Mono 0.15%
Stereo 0.25%

Stereo Separation

at 1KHz 40dB

Signal to Noise Ratio IHF

Mono 73dB
Stereo 68dB

Frequency Response

20Hz-15KHz $+0.5/-3$ dB

Audio Output Voltage

1KHz, 100% Mod 600mV

De-emphasis

USA/Canada Version:
75 μ Sec
Australia/Europe Version:
50 μ Sec

AM SECTION

Tuning Range USA/Canada Version:
520-1710KHz
Australia/Europe Version:
522-1611KHz

Scanning Frequency Interval

(AUTO/MANUAL) USA/Canada Version:
10KHz
Australia/Europe
Version: 9KHz

Usable Sensitivity IHF

at $S+N/N=20$ dB,
Loop Antenna $500\mu V/m$

Signal to Noise Ratio

30% Mod Ref 40dB

Audio Output Voltage

400Hz, 30% Mod 150mV

POWER CONSUMPTION

120W (15-190W)

DIMENSIONS

(W×H×D) 440(W)×109(H)×235(D)mm

WEIGHT

5.4Kg

Your Receiver is covered by a 3 years limited warranty on parts and labor. Please see the back of the Certified Performance Certificate for the exact warranty statement.

Note: specifications and design subject to change without notice for improvements.

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Specifications (for 2750)

POWER OUTPUT,	
Continuous RMS with no more than 0.2% THD	
at 8 ohms, 20~20,000Hz.....	55W
at 8 ohms, 1KHz.....	60W
INTERMODULATION DISTORTION,	
60Hz:7KHz=4:1 SMPTE	
55W output into 8 ohms	0.2%
DAMPING FACTOR	
at 1KHz, 8 ohms.....	40
INPUT SENSITIVITY	
for 55W output 8 ohms at 1KHz	
PHONO	2.5mV
AUX.....	150mV
PHONO PREAMP INPUT OVERLOAD	
at 1KHz, 0.2% THD.....	120mV
at 10KHz, 0.2% THD.....	570mV
SIGNAL TO NOISE RATIO, IHF	
“A” wtd/unwtd	
Phono	70/65dB
AUX.....	95/90dB
FREQUENCY RESPONSE	
Phono, RIAA 30-20,000KHz....	±0.5dB
AUX at 1W, -3dB	5Hz-40KHz
5BAND EQUALIZER CONTROL	
(60Hz, 250Hz, 1KHz, 4KHz, 16KHz).....	±10dB
SUBSONIC FILTER	
(12dB/OCT), -3dB frequency.....	30Hz
LOUDNESS CONTOUR	
at 100Hz.....	+7dB
at 100KHz.....	+3.5dB
CHANNEL SEPARATION	
at AUX input shorted	
100Hz	60dB
1KHz	60dB
10KHz.....	50dB
FM SECTION	
Tuning Range	
USA/Canada/Australia	
Version:87.5-108MHz	
Europe Version:	
87.50-108.00MHz	
Scanning Frequency Interval	
(AUTO/MANUAL).....	USA/Canada/Australia
Version:0.1MHz	
Europe Version:0.05MHz	
Usadle Sensitivity IHF	
at S+N+D/N+D=30dB	1.9μV(10.8dBf)
50dB Quieting Sensitivity, Stereo.....	50μV(39.2dBf)
THD at 1KHz, 100% MOD,	
Mode	0:15%
Stereo	0.25%
Stereo Separation	
at 1KHz.....	40dB
Signal to Noise Ratio IHF	
Mono.....	73dB
Stereo	68dB
Frequency Response	
20Hz-15KHz.....	+0.5/-3dB
Audio Output Voltage,	
1KHz, 100% Mod.....	600mV
De-emphasis	
USA/Canada Version:	
75μ Sec	
Australia/Europe Version:	
50μ Sec	

AM SECTION	
Tuning Range.....	
USA/Canada Version:	
520-1710KHz	
Australia/Europe Version:	
522-1611KHz	
Scanning Frequency Interval	
(AUTO/MANUAL).....	USA/Canada Version:
10KHz	
Australia/Europe	
Version: 9KHz	
Usable Sensitivity IHF	
at S+N/N=20dB,	
Loop Antenna.....	500μV/m
Signal to Noise Ratio,	
30% Mod Ref.....	40dB
Audio Output Voltage,	
400Hz, 30% Mod.....	150mV
POWER CONSUMPTION.....	
190W(20-300W)	
DIMENSIONS	
(W×H×D).....	440(W)×109(H)×235(D)mm
WEIGHT	
5.9Kg	

Your Receiver is covered by a 3 years limited warranty on parts and labor. Please see the back of the Certified Performance Certificate for the exact warranty statement.

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Electrical Adjustment Procedure

1. AM SECTION

1-A. IF ALIGNMENT

- Set the Function switch to AM.
- Set up the test equipment as Fig. 1-1 and set the IF Genescope output level to 80dB(10mV).
- Adjust T106 so that figure developed on the genescope becomes laterally symmetrical with the axis of symmetry at 450KHz and it has a maximum amplitude as well.

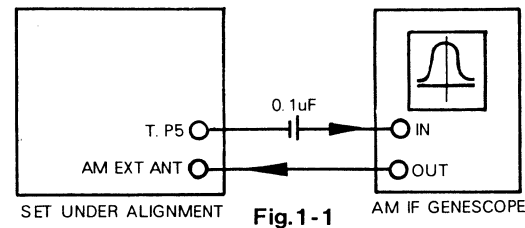


Fig. 1-1

1-B. AM TUNING VOLTAGE ALIGNMENT

- Set the Function switch to AM.
- Set up the test equipment as Fig. 1-2.
- Set the frequency of Tuner to 1710KHz.
- Adjust TC4 so that DVM reads DC 8V $\pm$ 0.01V.
- Set the frequency of Tuner to 520KHz.
- Adjust T105 so that DVM read DC1V $\pm$ 0.1V.
- Repeat steps c to f until DVM reads given voltage at given frequencies.

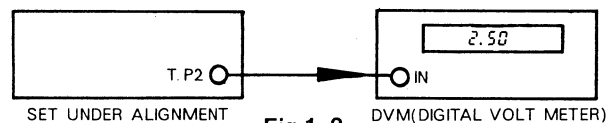


Fig. 1-2

1-C. RF TUNING ALIGNMENT

- Set the Function switch to AM.
- Set up the test equipment as Fig. 1-3.
- Set the AM SG to 30% Modulation at 400Hz and 70-80dB output(3-10mV which gives field intensity 150-500u V/m to the loop antenna).
- Set AM SG to 600KHz and set the frequency of Tuner to 600KHz and then adjust T104 to maximize audio output level.

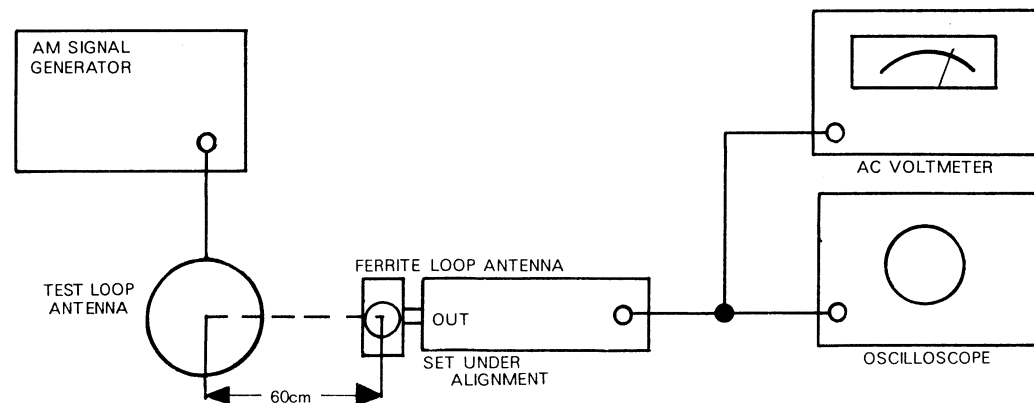


Fig. 1-3

1-D TUNED L.E.D ALIGNMENT

- Set up the test test equipment as Fig. 1-4.
- Set the AM SG to 1000KHz and adjust the output level control so that AM SG output level is 35dB(56uV).
- Adjust VR8 so that the TUNED LED lights slightly after FM mute level alignment

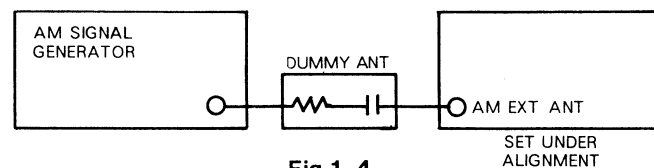


Fig. 1-4

2. FM SECTION

2-A. FM TUNING VOLTAGE ALIGNMENT

- Set the Function switch to FM.
- Set up the test equipment as Fig. 2-1.
- Set the frequency of Tuner to 106.0MHz
- Adjust TC104 so that DVM reads DC8.5V $\pm$ 0.1V

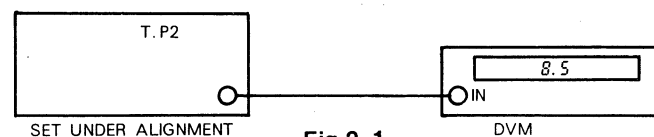


Fig. 2-1

2-B. IF ALIGNMENT

- Set the Function switch to FM.
- Set up the test equipment as Fig. 2-2.
- Adjust the core of T102 so that the S-curve developed on the IF genescope becomes point symmetrical to the center frequency point of 10.7MHz with a maximum amplitude and the voltage between T.P5 and T.P6 is 0V $\pm$ 50mV.

- If the IF genescope is not available, set the tuner detuned and adjust the core of T102 which is near the I.C101 so that noise output is maximized and the voltage between T.P3 and T.P4 is 0V $\pm$ 50mV.

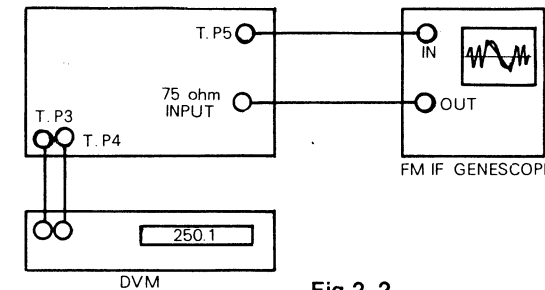


Fig. 2-2

2-D. MUTE LEVEL ALIGNMENT

- Set the mode/mute switch to ON position.
- Set the test equipment as Fig. 2-3.
- Set the FM SG to 7-10uV output.
- Tune FM SG and Tuner to 98.0MHz and stop adjusting VR9 at the position where muting marginally occurs.

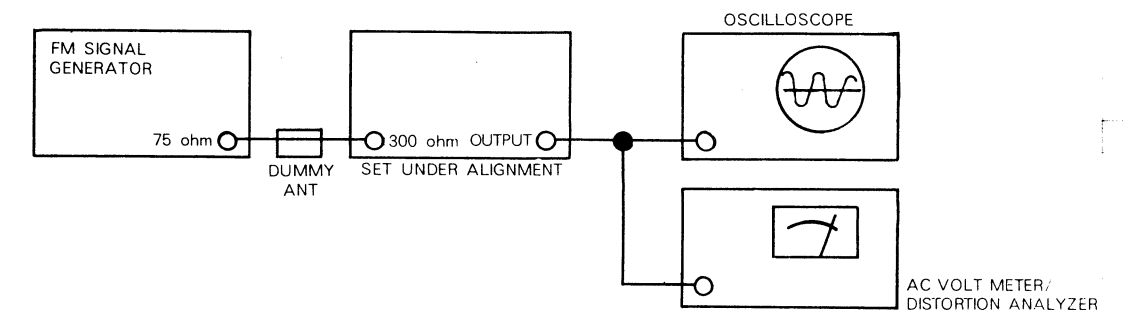


Fig. 2-3

2-E. MPX ALIGNMENT

- Set the mode/mute switch to STEREO.
- Set up the test equipment as Fig. 2-4.
- Set FM SG to 60dB(1mV) and MPX SG to 75KHz deviation at 1KHz for left(right) channel 7.5KHz deviation for 19KHz pilot signal.
- Set the frequency 98.0MHz.
- Set FM SG to modulation OFF position and adjust VR10 so that frequency counter reads 76KHz.
- Adjust T101 to minimize Distortion.

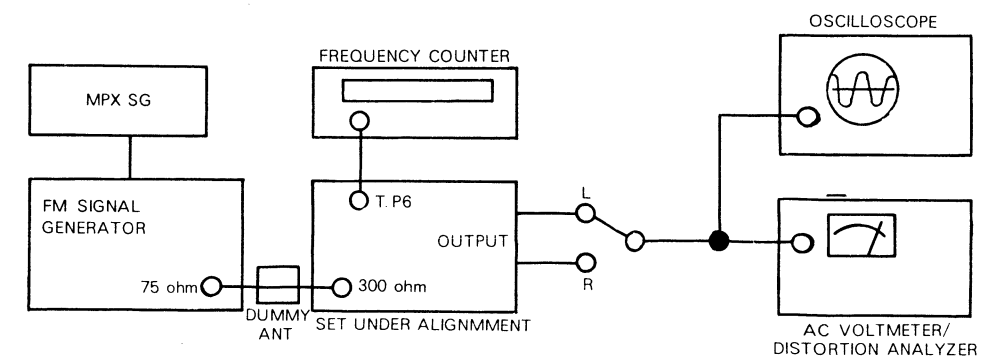


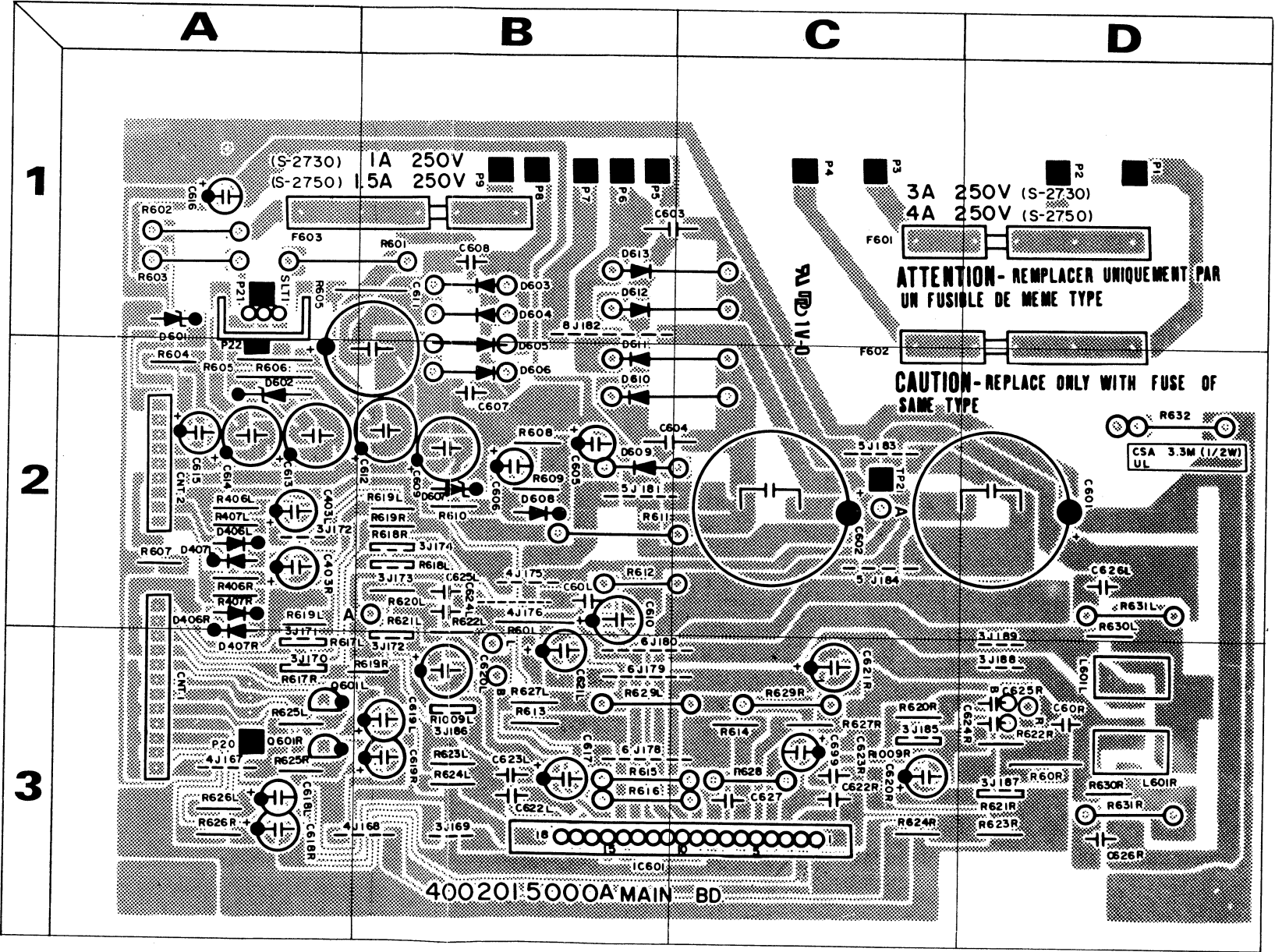
Fig. 2-4

Parts List & Top View of P.C Board

MAIN BOARD 4002015000

Ref. No.	Parts No.	Description	Position	Remark
● IC				
IC601	2178317119	IC STK4162 II	B3	S-2730
	2178317120	IC STK4191 II		S-2750
● TRANSISTOR				
Q601L/R	2008610102	TR NPN 2SD1302S	A3	
Q602	2028406113	TR NPN KTD880Y	A1	
● DIODE				
D406L/R	2058010100	IN60 Pair	A2	
D407L/R				
D610, 611	2058100105	Rectifier 1N5402	B1, B2	
D612, 613				
D603, 604	2058106100	Rectifier 1N4002	B1	
D605, 606				
D609				
D608	2058306101	IN4148	B2	
D601	2058513101	Zener RD 3.9 EB2	A1	
D607	2058513120	Zener RD18 EB1	B2	
D602	2058513127	Zener RD18 EB2	A2	
● COIL				
L601L/R	2648001010	Inductor 0.5μH	D3	
● FUSE				
F603	5508212031	NB 31.8 1A250V	B1	S-2730(For UL/CSA) S-2730(For Europe) S-2750(For UL/CSA) S-2750(For Europe)
	5508212231	NB31.8 1.5A 250V		
F601	5508212631	NB31.8 3A 250V	D1	S-2730(For UL/CSA) S-2730(For Europe) S-2750(For UL/CSA) S-2750(For Europe)
	5508213931	NB31.8 4A 250V		
● CAPACITOR				
C610	3409210171	E AF SA 100μF 50V		
C611	3409210241	E AF SA 1000μF 25V	A1	
C609, 613	3409222141	E AF SA 220μF 25V	B2, A2	
C614	3409233140	E AF SA 330μF 25V	A2	
C601, 602	3419533294	AF Elect 3300μF 40V	C2, D2	
C618L/R	3479210061	E AF SA T 10μF 35V		
C699		E AA SA 100μF 25V		
C605	3479210071	E AF SA 10μF 50V		
C612	3479210141	E AF SA T100μF 25V		
C606, 617	3479222071	E AF SA 22μF 50V		
C403L/R	3479222871	E AF SA T0.22μF 50V		
C602L/R	3479247041	E AF SA T47μF 25V		
C620L/R				
C621L/R				
C619L/R	3479247971	E AF SA T4.7μF 50V		
C603, 604	3509103450	C 0.01μF 50V		
C625L/R	3579100030	C T10PF 50V		
C622L/R	3579101130	C T100PF 50V		
C623L/R	3579560130	C 56PF 50V		
C607, 608	3679203120	C T0.02μF 100V		
C621	3679333120	C T0.03μF 100V		
C601L/R	3679473120	C T0.047μF 100V		
C626L/R				
● RESTOR				
R615, 616	3039102372	MO 1K ohm 1/2W	B3	
R602, 603	3039121472	MO 120 ohm 1W	A1	
R60L/R	3039222372	MO 2.2K ohm 1/2W	B3, C3	
R629L/R				
R601	3039339472	MO 3.3 ohm 1W	A1	
R611	3039391572	MO 390 ohm 2W	B2	
R612	3009100273	CF 10 ohm 1/4W	B2	
R606, 628	3009101273	CF 100 ohm 1/4W	A1, C3	
R605	3009241273	CF 240 ohm 1/4W		
R632	3009355372	CF 3.3M ohm 1/2W	D2	Protector against thunder bolt(For UL/CSA only)
R630L/R	3069100970	CF 10 ohm 1/2W	D2, D3	
R624L/R	3069102970	CF 1K ohm 1/2W		
R614	3069103970	CF 10K ohm 1/2W		
R607	3069104970	CF 100K ohm 1/2W		
R622L/R	3069154970	CF 150K ohm 1/2W		
R623L/R				

Ref. No.	Parts No.	Description	Position	Remark
R1009	3069202970	CF 2K ohm 1/2W		
R609	3069224970	CF 220K ohm 1/2W		
R625L/R	3069332970	CF 3.3K ohm 1/2W		
R601L/R				
R613	3069334970	CF 330K ohm 1/2W		
R608	3069472970	CF 4.7K ohm 1/2W		
R626L/R	3069473970	CF 47K ohm 1/2W		
R627L/R	3069122970	CF 1.2K ohm 1/2W		



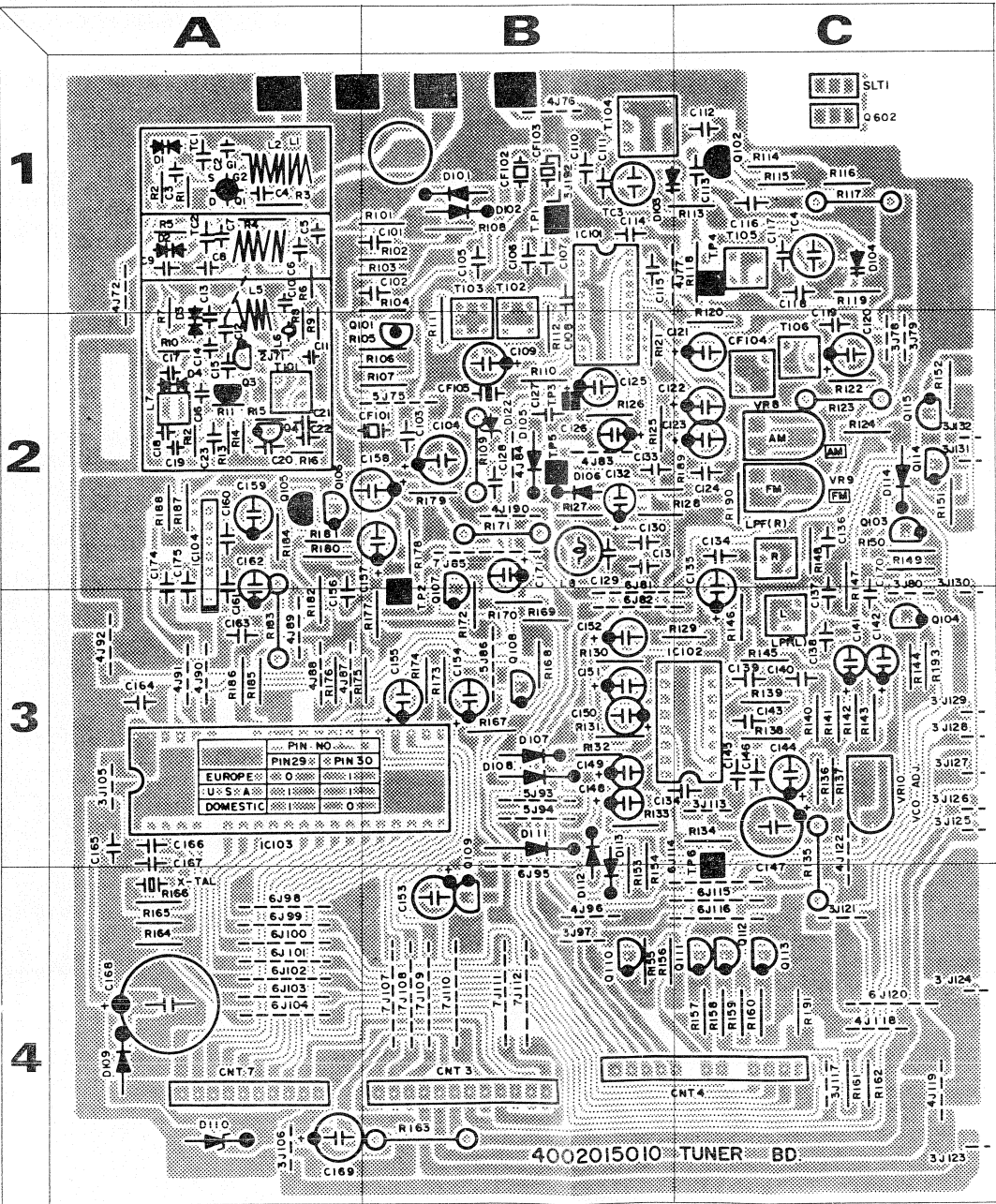
Parts List & Top View of P.C Boards

TUNER BOARD 4002015010

Ref. No.	Parts No.	Description	Position	Remark
● IC				
IC101	2168017119	IC LA1265	B1	
IC102	2168411105	IC HA12016	C3	
IC103	2138007108	IC TC9147	A3	
IC104	2108007102	IC TD6104P	A2	
● TR, FET				
Q2, 4	2008406103	NPN KTC 1923Y	A2	
Q101	2008409101	NPN LM 9018F	B1	
Q103, 110	2208206105	PNP KTA 1015Y	C2, B4	
Q113, 116				
Q104, 111	2208606104	NPN KTC 1815Y	C2, C4	
Q112, 108			B3	
Q109, 117				
Q118				
Q106	2208606108	NPN KTC 2240BL	A2	
Q3	2018206110	FET N-CH KTK 161YR	A2	
Q102	2018207115	FET N-CH 2SK 192GR	C1	
Q105	2018211100	FET N-CH 2SK 168D	A2	
Q1	2018213100	FET N-CH 3SK 74L	A1	
● DIODE				
D101, 102	2058010100	1N 60 Pair	B1	
D105, 106	2058306101	1N 4148		
D107, 108				
D109, 111				
D112, 113				
D114, 121				
6J82				
D110	2058513104	Zener RD5.6 EB2	A4	
6J95	2058513107	Zener RD12 EB3	B3	
D122	2058513116	Zener RD9.1 EB3	B2	
D103, 104	2058819106	Varactor KV1236Z	C1	
D1, 2, 4	2058819107	Varactor KV1310A-3	A1, A2	
● COIL				
T104	2608201100	AM RF	B1	
L3	2618001050	FM RF A	A1	
L4	2618001060	FM RF B	A1	
L7	2638001050	FM OSC	A2	
T105	2638201150	AM OSC	C1	
L1	2648001170	FM ANT. A	A1	
L2	2648001180	FM ANT. B	A1	
L6	2648601400	Inductor 2.2μH	A1	
LPF L/R	2658301100	Filter MPX 19KHz	C2	
T102	2838501110	FM Quad Det. A	B1	
T103	2838501210	FM Quad Det. B	B1	
T101	2838501220	FM IFT	A2	
T106	2848001250	AM IFT	C2	
● Resistor				
R109, 171	3009101273	CF 100 ohm 1/4W	B2, A2	
R183				
R4, 187	3009101973	CF 100 ohm 1/8W		
R6	3009104973	CF 100K ohm 1/8W		
R8, 114	3009105973	CF 1M ohm 1/8W		
R117, 135	3009221273	CF 220 ohm 1/4W	C1, C3	
R123	3009222273	CF 2.2K ohm 1/8W		
R16	3009272973	CF 2.7K ohm 1/8W		
R15	3009682973	CF 6.8K ohm 1/8W		
R163	3039121472	MO 120 ohm 1W	B4	
R118	3069101970	CF 100 ohm 1/8W		
R156, 159	3069102970	CF 1K ohm 1/8W		
R133, 129				
R179				
R112, 121	3069103970	CF 10K ohm 1/8W		
R125, 157				
R158, 177				
R180, 189				
R3, 199				
R11, 101	3069104970	CF 100K ohm 1/8W		
R131, 132				
R113, R119				
R144, 176				
R185, 175				
R14, 161	3069123970	CF 12K ohm 1/8W		
R162	3069153970	CF 15K ohm 1/8W		
R154	3069164970	CF 150K ohm 1/8W		

Ref. No.	Parts No.	Description	Position	Remark
R141	3069184970	CF 180 ohm 1/8W		
R137, 143	3069223970	CF 22K ohm 1/8W		
R150, 164				
R165				
R108	3069224970	CF 220K ohm 1/8W		
R106, 184	3069271970	CF 270 ohm 1/8W		
R182, 186	3069272970	CF 2.7K ohm 1/8W		
R13	3069331970	CF 330 ohm 1/8W		
R111, 142	3069332970	CF 3.3K ohm 1/8W		
R146, 105				
R138, 145				
R151, 136				
R2, 5, 10,	3069333970	CF 33K ohm 1/8W		
R128, 173				
R107, 115	3069471970	CF 470 ohm 1/8W		
R102, 120	3069472970	CF 4.7K ohm 1/8W		
R169				
R1, 153, 167	3069473970	CF 47K ohm 1/8W		
R124, 149				
R168				
R139, 145	3069513970	CF 51K ohm 1/8W	C3	FM De-emphasis
R174	3069563970	CF 5.6K ohm 1/8W		
R134, 178	3069562970	CF 5.6K ohm 1/8W		
R130	3069621970	CF 620 ohm 1/8W		
R147, 148	3069682970	CF 6.8K ohm 1/8W		
R122	3069683970	CF 68K ohm 1/8W		
R110, 181	3069220970	CF 82K ohm 1/8W		
R155, 160	3069821970	CF 820 ohm 1/8W		
R103	3069822970	CF 8.2K ohm 1/8W		
VR8	3248010325	Semi 10KB	C2	
VR9	3248020325	Semi 20KB	C3	
VR10	3248030225	Semi 3K	C3	VCO ADJ
● Capacitor				
C147	3408222131	E AF SA 220μF 16V		
C168	3409222211	E AF SA 2200μF 6.3V	A4	
C121, 122	3479210061	E AF SA T10μF 35V		
C126				
C155, 149	3479210971	E AF SA T1μF 50V		
C150, 171				
C157, 132				
C109, 120	3479222031	E AF SA T22μF 25V		
C141, 144				
C154	3479222971	E AF SA T2.2μF 50V		
C169	3479222121	E AF SA 220μF 10V		
C123, 125	3479233971	E AF SA T3.3μF 50V		
C148, 151				
C159	3479247021	E AF SA T47μF 10V		
C158, 162	3479247031	E AF SA T47μF 16V		
C142, 152	3479247791	E AF SA 0.47μF 50V		
C153, 135				
C5, 6, 11, 21	3509223530	C 0.022μF 50V		
C18	3529100110	C 10pF RH 50V		
C22	3529150210	C 15pF CH 50V		
C15	3529209210	C 2pF CH 50V		
C117	3529270110	C 27pF RH50V		
C166, 167	3529270210	E AF SA 27pF CH 50V		
C16	3529309210	C 3pF CH 50V		
C20	3529330210	C 33pF CH 50V		
C3	3529809110	C 8pF RH 50V		
C19	3529809210	C 8pF CH 50V		
C10, 105	3579101130	C T100pF 50V		
C175				
C9, 160, 163	3579103530	C T0.01μF 50V		
C164, 165				
C127	3579221130	C T220pF 50V		
C101, 102	3579223530	C 0.022μF 50V		
C103, 124				
C116, 106				
C107, 110				
C113, 114				
C115, 23,				
C161				
C112	3579470130	C T47pF 50V		
C133	3579472130	C 0.0047μF 50V		
C128	3579473530	C T0.047μF 50V		
C146	3579681230	C T680pF 50V		
C134	3619102110	P 1000pF 50V		
C118	3619391110	P 390pF 50V		
C139, 143	3679152120	P.M T0.0015μF 100V	C3	FM De-emphasis 75μs(For UL/CSA)

Ref. No.	Parts No.	Description	Position	Remark
	3679102120	M T0.001μF 100V		50μs(For Europe)
C136, 137	3679222120	M T0.0022μF 100V		
C138				
C145	3679473120	M T0.047μF 100V		
TC1, TC2	3838001000	C Trimmer TZ03T1	A1	
TC3, TC4	3838001010	C Trimmer TZ03R2	B1, C1	
CF104	3908001010	FLTR C SFP450H	C2	
CF105	3908001020	FLTR C BFU 450C4N	B2	
CF101 102	3908011001	FLTR C SFE 10.7 MA8	B2, B1	For UL/CSA
		FLTR C SFE 10.7 MS3G		For FTZ
X-TAL	3908101030	X-TAL HC-18/U 7.2MHz	A3	



Parts List & Top View of P.C Boards

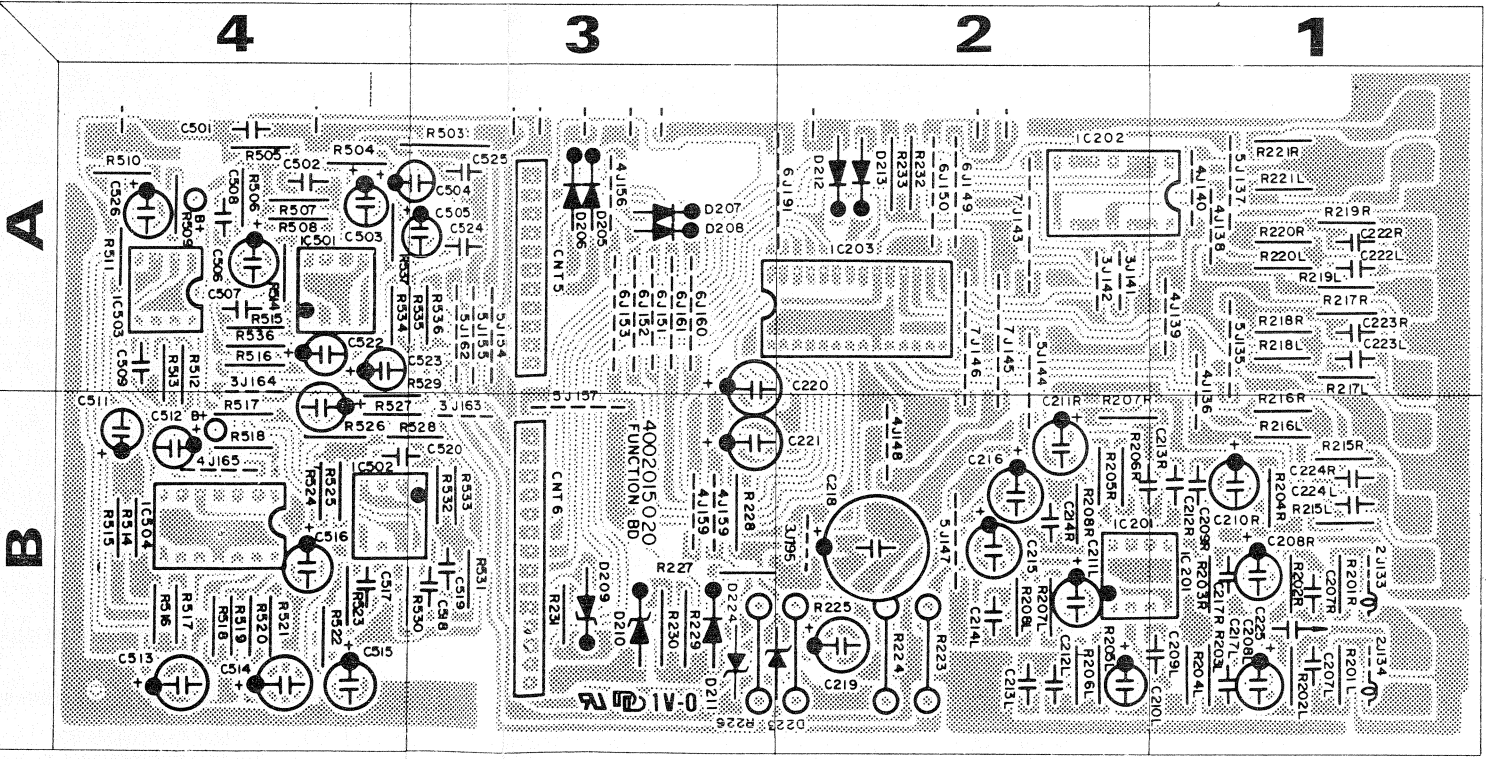
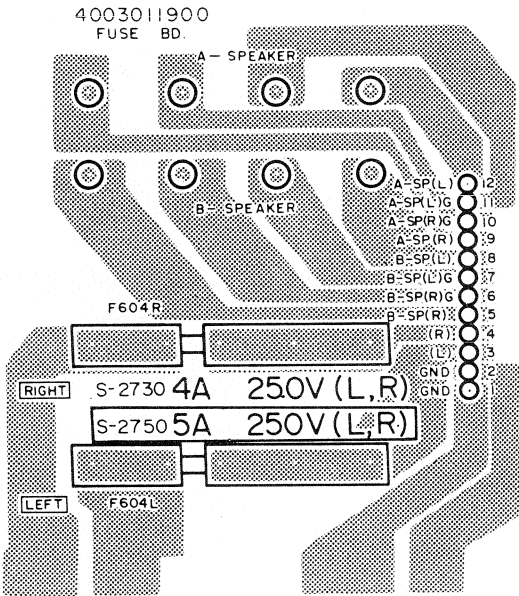
FUNCTION BAORD 4002015020

Ref. No.	Parts No.	Description	Position	Remark
● IC				
IC202	2138009101	IC MC 14066BCP	A1	
IC203	2138017105	IC LC7815H	A2	
IC201	2168220104	IC NJM 4558DD	B1	
● RESISTOR				
R225, 226	3009151273	CF 150 ohm 1/4W	B2	
R223, 224	3009221273	CF 220 ohm 1/4W	B2	
R201L/R	3069102970	CF 1K ohm 1/4W		
R215L/R				
R217L/R				
R219L/R				
R207L/R				
R231, 232	3069103970	CF 10K ohm 1/4W		
R202L/R	3069104970	CF 100K ohm 1/4W		
R208L/R				
R216L/R	3069184970	CF 180K ohm 1/4W		
R218L/R				
R221L/R				
R228	3069224970	CF 220K ohm 1/4W		
R229, 230	3069271970	CF 270 ohm 1/4W		
R233	3069272970	CF 2.7K ohm 1/4W		
R206L/R	3069433970	CF 43K ohm 1/4W		
R205L/R	3069564970	CF 560K ohm 1/4W		
R204L/R	3069821970	CF 820 ohm 1/4W		
R220L/R	3069823970	CF 82K ohm 1/4W		
R203L/R	3069913970	CF 91K ohm 1/4W		
● CAPACITOR				
C218	3409210231	E AF SA 1,000μF 16V		
C208L/R	3479210071	E AF SA T10μF 50V		
C219, 220	3479210131	E AF SA T100μF 16V		
C211L/R	3479222871	E AF SA T0.22μF 50V		
C221	3479222971	E AF SA T2.2μF 50V		
C210L/R	3479247011	E AF SA 47μF 6.3V		
C215, 216	3479247031	E AF SA T47μF 6V		
C217L/R	3579100130	C T10PF 50V		
C207L/R	3579680130	C T68pF 50V		
C214L/R	3679152120	M T0.0015μF 100V		
C212L/R	3679182120	M T0.0018μF 100V		
C209L/R	3679222120	M T0.0022μF 100V		
C213L/R	3679562120	M T0.0056μF 100V		
● IC				
IC501	2168220103	IC NJM 4560DD	A4	S-2750 Only
IC502	2168220104	IC NJM 4558DD	B3	(Synthetic Stereo
IC503	2168010102	IC MN 3101	A4	Circuit)
IC504	2168024106	IC MN 3010	B4	
● RESISTOR				
R517, 518	3009221273	CF 220 ohm 1/4W		
R506, 509				
R510	3009101973	CF 100 ohm 1/4W		
R519, 518	3069104970	CF 100K ohm 1/4W		
R517, 516				
R524, 536				
R516	3069222970	CF 2.2K ohm 1/4W		
R530, 531	3069223970	CF 22K ohm 1/4W		
R537, 533				
R504, 505				
R511, 527				
R522				
R535, 534	3069472970	CF 4.7K ohm 1/4W		
R502, 501				
R528, 526	3069123970	CF 12K ohm 1/4W		
R520, 514	3069562970	CF 5.6K ohm 1/4W		
R515, 521				
R507, 525	3069563970	CF 56K ohm 1/4W		
R508	3069184970	CF 180K ohm 1/4W		
R532, 515	3069333970	CF 33K ohm 1/4W		

Ref. No.	Parts No.	Description	Position	Remark
● CAPACITOR				
C523, 521	3409210971	AF SA 1μF 50V		
C503, 526	3409247031	AF SA 47μF 16V		
C513, 506				
C505, 515	3409210061	AF SA 10μF 35V		
C504, 512				
C514, 511	3409113971	AF SA 3.3μF 50V		
C516	3409222031	AF SA 22μF 16V		
C522	3409122871	AF SA 0.22μF 50V		
C517	3509101130	C 100pF 50V		
C520, 502	3509470130	C 47pF 50V		
C507				
C509	3509330130	C 33PF 50V		
C518, 501	3609122120	M 0.0012μF 100V		
C508, 519	3679102120	M 0.001μF 100V		

400301190 TERMINAL BOARD

Ref. No.	Parts No.	Description	Position	Remark
● FUSE				
F604L/R	5508212931	NB 31.8 4A 250V	S-2730(For UL/CSA)	
	5508402934	FB 20 4A 250V	S-2730(For Europe)	
	5508213031	NB 31.8 5A 250V	S-2750(For UL/CSA)	
	5508403034	FB20 5A 250V	S-2750(For Europe)	



Parts List & Top View of P.C Boards

4002015100(S-2730) FRONT BOARD
4002015200(S-2750)

Ref. No.	Parts No.	Description	Position	Remark
●IC				
IC105	2108007101	IC TD 6301AP	C3	
IC401L, 402R	2160022113	IC BA 144 61	G1	
IC301	2168220103	IC NJM 4560DD	B2	S-2750 Only
FIP101	2328130911	FL Display FID 7B 8AS	C1	
●TRANSISTOR				
Q116	2208206105	PNP KTA 1015Y	E2	
●DIODE				
D115	2058513104	Zener RD4.6EB2	E2	
LAMP	2528203310	Lamp 12V 60mV	B1	
D116, 202	2308220326	LED SLD 56MC		
D203, 204				
D401L/R	2308220507	LED SLD 56DC		
D402L/R				
D403L/R				
D404L/R				
D405L/R				
D117, 118				
D119, 120				
D201				
●RESISTOR				
R1001, 1002	3069101970	CF 100 ohm 1/4W		
R327L/R	3069102970	CF 1K ohm 1/4W		
R332L/R				
R402L/R	3069103970	CF 10K ohm 1/4W		
R330L/R	3069183970	CF 18K ohm 1/4W		
R401L/R				
R403L/R	3069223970	CF 22K ohm 1/4W		
R404, 405	3069330970	CF 33 ohm 1/4W TAP		
R1003, 1004	3069331970	CF 330 ohm 1/4W		
R324L/R	3069332970	CF 3.3K ohm 1/4W		
R329L/R	3069823970	CF 82K ohm 1/4W		
NWK102	3088473173	Network 47K(11)	D2	
NWK101	3088473174	Network 47K(13)	C2	
VR1	3208042510	VR Rotary K162P 250K	H1	
VR2	3238406110	Slide VR S3018PC 1M SW	B1	
VR3, 4	3238405620	Slide VR S3028PC 100KC	A1	S-2730 Only
●CAPACITOR				
C402L/R	3479210971	E AF SA T14F 50V		
C401	3479222031	E AF SA T224F 16V		
C201, 202	3579103530	C T0.014F 50V		
C203, 204				
C205, 206				
C329R	3579121130	C T120pF 50V		
C319L				
C170	3579222350	C 0.00224F 50V		
C308L/R	3779223120	M T0.0224F 100V		
C330L/R	3679333120	M T0.0334F 100V		
●TRANSISTOR				
Q301L/R	2208 06104	NPN KTC 1715Y	A1, A2	S-2750 Only (EQ Circuit)
Q302L/R				
Q393L/R				
Q393L/R				
Q304L/R				
Q305L/R				
●RESISTOR				
R303L/R	3009391977	CF 390 ohm 1/4W		
R307L/R				
R311L/R				
R315L/R				
R319L/R				
R302L/R	3069122970	CF 1.2K ohm 1/4W		
R310L/R	3069152970	CF 1.5K ohm 1/4W		
R314L/R				
R318L/R				
R304L/R	3069154970	CF 150K ohm 1/4W		
R308L/R	3069104970	CF 100K ohm 1/4W		
R312L/R	3009393975	CF 39K ohm 1/4W		
R316L/R	3009333973	CF 33K ohm 1/4W		
R320L/R	3069223970	CF 22K ohm 1/4W		
R317L/R	3069123970	CF 12K ohm 1/4W		
R301L/R				
R305L/R				

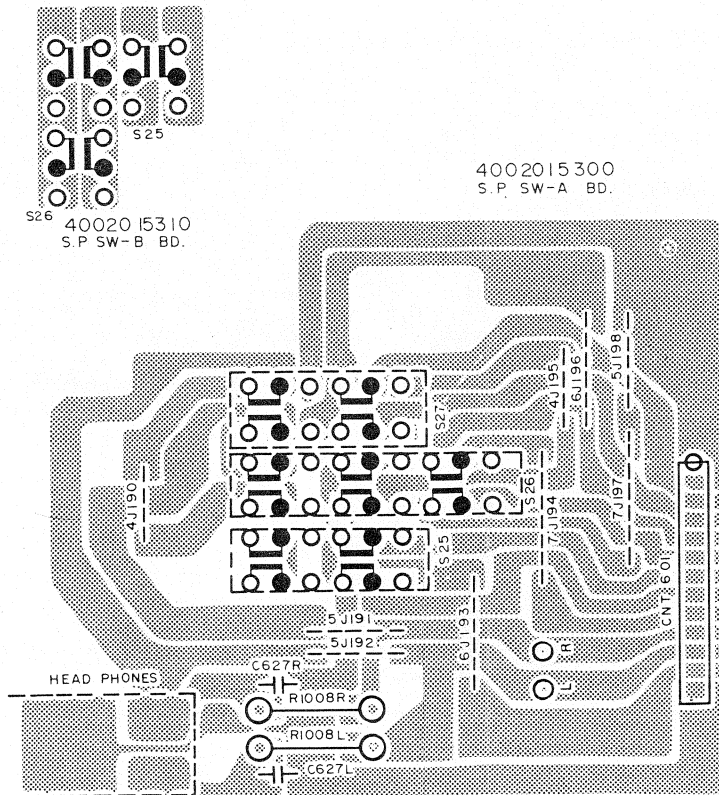
Ref. No.	Parts No.	Description	Position	Remark
R309L/R				
R313L/R				
R321, 322	3069221970	CF 220 ohm 1/4W		
VR3, 4, 5, 6, 7	3238405620	Slide VR S3028PC 100KC	A1, B1	
●CAPACITOR				
C315, 316	3409247030	E AF SA 474F 16V		
C302L/R	3409222971	E AF SA 2.24F 50V		
C304L/R	3409233871	E AF SA 0.334F 50V		
C301L/R	3609183130	MO M 0.0184F 100V		
C303L/R	3609103120	M 0.014F 100V		
C305L/R	3609472120	M 0.00474F 100V		
C310L/R				
C307L/R	3609152120	M 0.00154F 100V		

4002015300 SPEAKER SW. BOARD

Ref. No.	Parts No.	Description	Position	Remark
●RESISTOR				
R1008L/R	3039271472	MO 270 ohm 1W		

4002015030 STATION BOARD

Ref. No.	Parts No.	Description	Position	Remark
●DIODE				
D122, 123	2308220127	LED SLR34URC		
D124, 125				
D126, 127				
D128, 129				



Boards

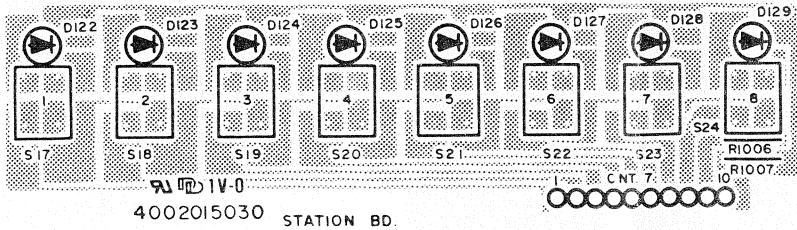
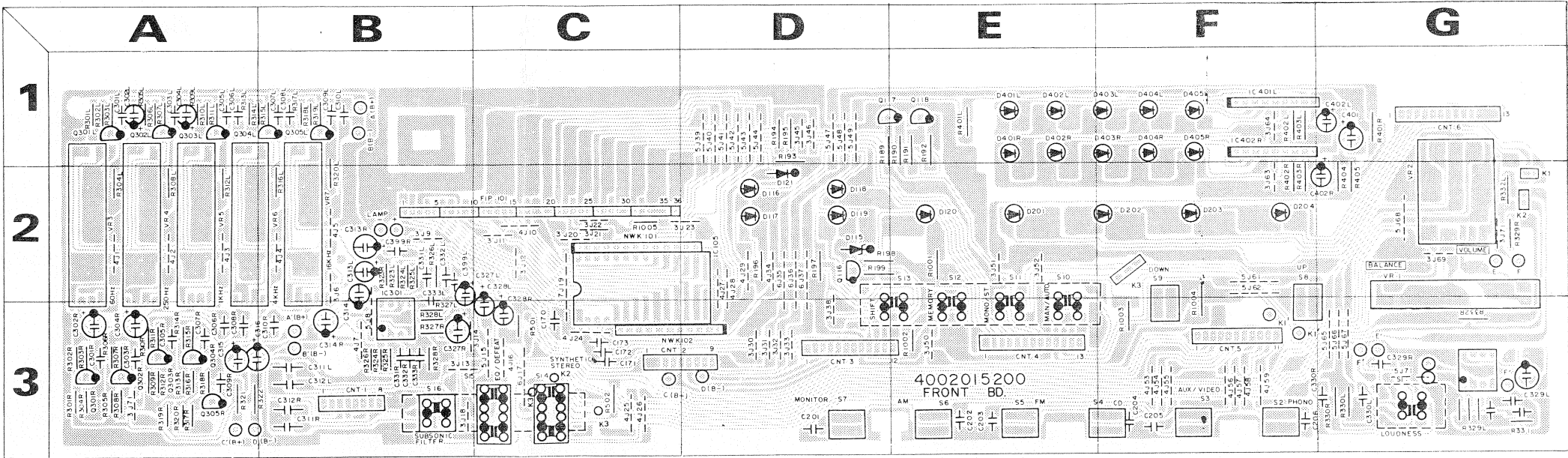
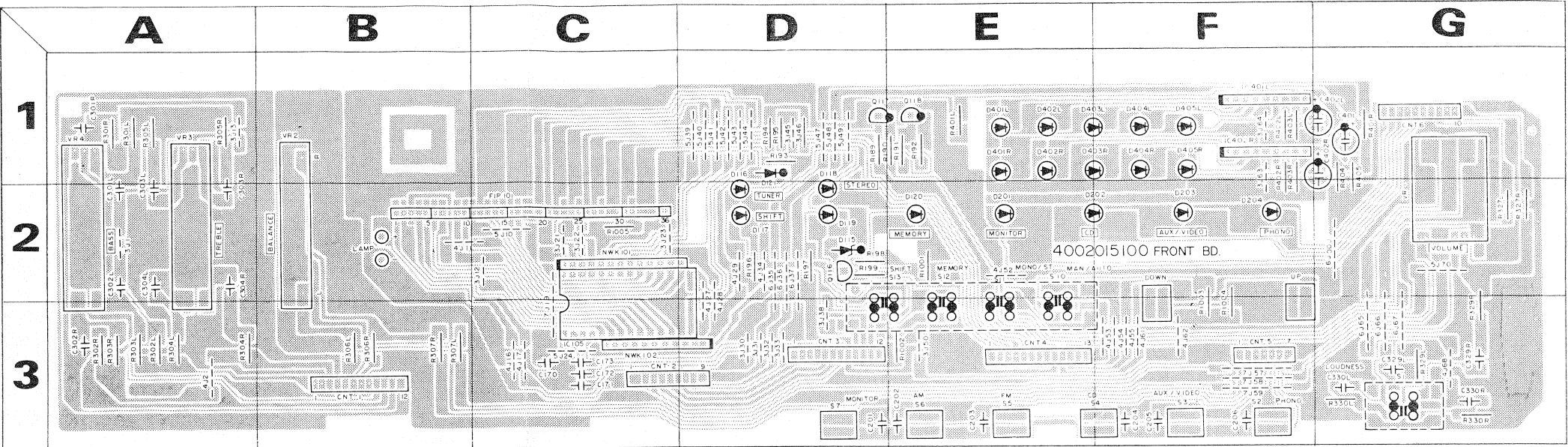
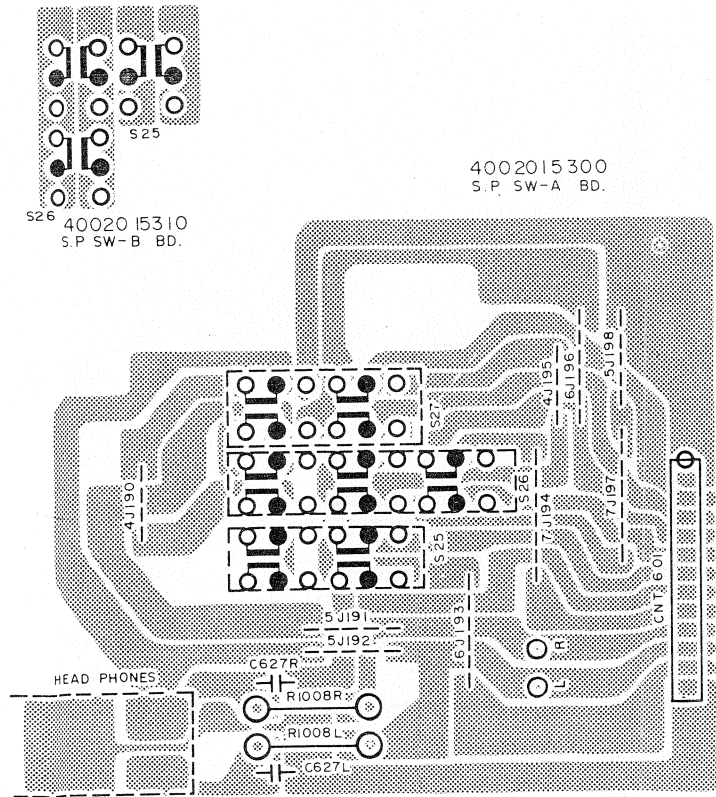
Ref. No.	Parts No.	Description	Position	Remark
R309L/R				
R313L/R				
R321,322	3069221970	CF 220 ohm 1/4W		
VR3,4,5,6,7	3238405620	Slide VR S3028PC 100KC	A1,B1	
●CAPACITOR				
C315,316	3409247030	E AF SA 47μF 16V		
C302L/R	3409222971	E AF SA 2.2μF 50V		
C304L/R	3409233871	E AF SA 0.33μF 50V		
C301L/R	3609183130	MO M 0.018μF 100V		
C303L/R	3609103120	M 0.01μF 100V		
C305L/R	3609472120	M 0.0047μF 100V		
C310L/R				
C307L/R	3609152120	M 0.0015μF 100V		

I002015300 SPEAKER SW.BOARD

Ref.No	Parts No.	Description	Position	Remark
●RESISCTOR				
R1008L/R	3039271472	MO 270 ohm 1W		

I002015030 STATION BOARD

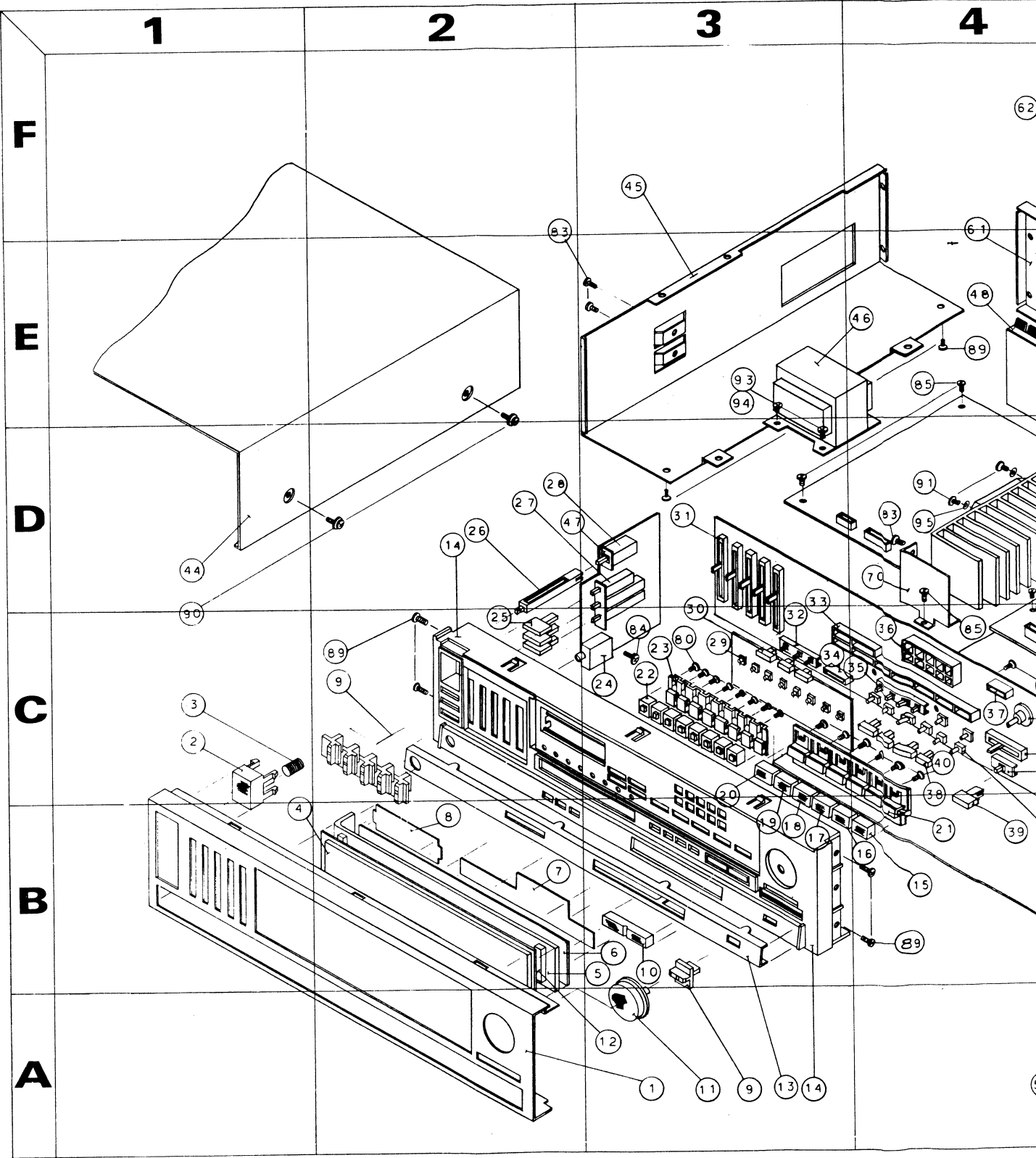
Ref.No	Parts No.	Description	Position	Remark
●DIOOE				
D122,123	2308220127	LED SLR34URC		
D124,125				
D126,127				
D128,129				



Parts List & Exploded View of Cabinet & Chassis

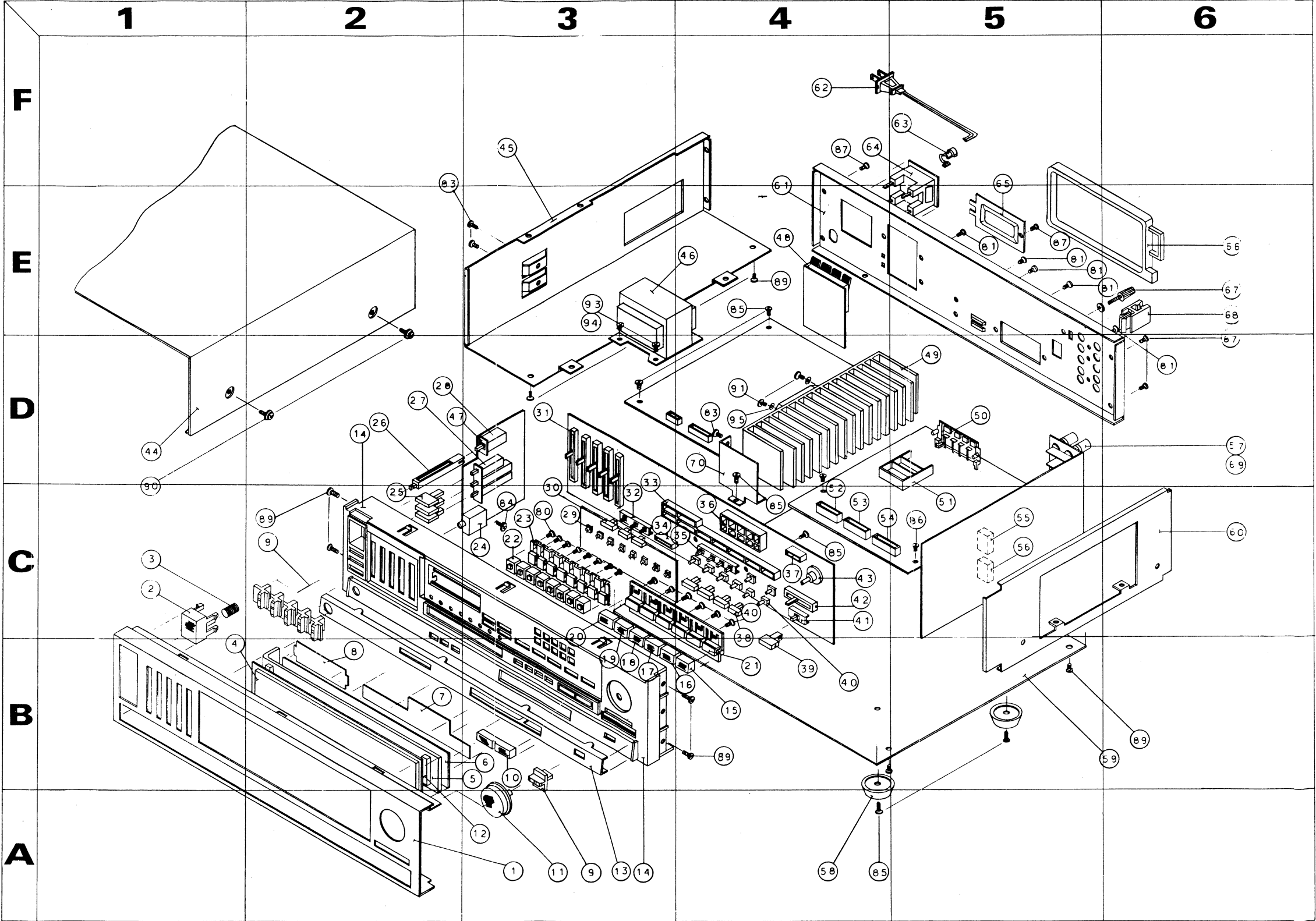
NO.	PARTS NO.	DESCRIPTION	Q'TY	POSITION	REMARK
1	04860213211	PANEL FRONT	1	A3	S-2730
	048602013221		1	A3	S-2750
2	048545026611	BUTTON PUSH	1	C1	
3	6555601020	SPRING COIL	1	C1	
4	8553004210	WINDOW	1	B2	
5	048573005012	PLATE ILLUMINATION	1	B3	S-2730
	048573005011		1	B3	S-2750
6	048533002912	INLAY	1	B3	S-2730
	048533002911		1	B3	S-2750
7	8535008410	DIFFUSER	1	B2	S-2730
	8533003510		1	B2	S-2750
8	8335005820	FILTER DISPLAY	1	B2	
9	048543006211	KNOB SLIDE	3	A3, C2	S-2730
			6	A3, C2	S-2750
10	048545027071	CAP BUTTON(SEA SAW)	1	B3	
11	048645008711	KNOB TUNING	1	A3	
12	6715010310	COVER SIDE	2	A3	
13	048623002211	PLATE DECORATION	1	A3	S-2730
	048623002221		1	A3	S-2750
14	048521002211	BODY FRONT	1	A3	
15	048545026916	CAP BUTTON PHONO	1	B4	
16	048545026915	CAP BUTTON AUX/VIDEO	1	B4	
17	048545026914	CAP BUTTON CD	1	B3	
18	048545026913	CAP BUTTON FM	1	B3	
19	048545026912	CAP BUTTON AM	1	B3	
20	048545026911	CAP BUTTON TAPE MONITOR	1	B3	
21	6053001310	BASE BUTTON TACT	1	B4	
22	8545027110	CAP BUTTON	8	C3	
23	6053001410	BASE BUTTON TACT	1	C3	
24	4438000810	JACK HEAD PHONE	1	C3	
25	048545020412	BUTTON PUSH	3	C2	
26	6305000430	SHAFT BUTTON	1	D2	
27	4628040110	SW. PUSH SUF30 GS ALPS	1	D2	S-2730
28	4628034210	SW. PUSH J. ALPS TV-3	1	D2	S-2750
	4628034220	TV-5	1	D2	
29	4658002020	SW. TACT GS ALPS KHH10906	8	C3	
30	8545026810	BUTTON PUSH	3	C3	S-2750 ONLY
31	3238405620	SLVR 30L 100KC×2 L=10	2	D3	S-2730
	3238405610	100KB×2 L=10	5	D3	S-2750
32	4628040220	SW. PUSH J. ALPS SPEA33	1	C3	S-2750 ONLY
33	8553004110	REFLECTOR LED	1	C3	
34	4358001810	ASS'Y CONNECTOR	1	C3	
35	4628040210	SW. PUSH J. ALPS 4KEY	1	C4	
36	8555010310	HOUSE LED	1	C4	
37	4358001910	ASS'Y CONNECTOR	1	C4	
38	8545026710	BUTTON PUSH	4	B4	
39	8545026810	BUTTON PUSH	1	B4	
40	4659002610	SW. TACT GS ALPS KHH10914	8	B4	
41	4628038810	SW. PUSH J. ALPS SPEA 1KEY	1	C4	
42	3238406110	SLVR 30L IMSW. ×1 L=10	1	C4	
43	3208042510	VR016 250KB×2 L=20	1	C4	
44	046122009911	CABINET TOP	1	D1	
45	6122611210	FRAME SIDE L	1	F3	
46	2828040201	POWER TRANSFORMER	1	E4	S-2730
	2828040501		1	E4	S-2750
47	6505064110	BKT POWER SW.	1	D4	
48	4408102020	TERMINAL SPEAKER	1	E4	
49	7503006010	HEAT SINK	1	D5	S-2730
	7503006020		1	D5	S-2750
50	4408102610	TERMINAL ANT	1	D5	
51	6165121010	SHIELD FENCE	1	C5	
52	4355005610	CONNECTOR(10P)	1	C4	
53	4428510720	CONNECTOR(12P)	1	C4	
54	4428510710	CONNECTOR(11P)	1	C4	
55	4428510700	CONNECTOR(1P)	1	C5	
56	4428505510	CONNECTOR(8P)	1	C5	
57	4438100510	JACK RCA(6P)	1	D6	
58	6335000110	FOOT RUBBER	4	A4	
59	6122409910	COVER BOTTOM	1	B6	
60	6123616510	FRAME SIDE R	1	C6	
61	046102016511	CHASSIS BACK	1	E4	S-2730
	046102016512		1	E4	S-2750
62	4308001410	CARD AC POWER	1	F4	FOR UL/CSA
	4308000430		1	F4	FOR EUROPE
63	6518000710	STOPPER CORD	1	F5	FOR UL/CSA
	6518000111		1	F5	FOR EUROPE
64	4448100910	OUTLET AC	1	F4	FOR UL/CSA
65	046165118213	COVER FUSE	1	E5	FOR EUROPE
66	2608207050	ANT. LOOP LA-1300	1	E6	
67	4465100110	TERMINAL GROUND	1	E6	
68	6518000210	HOLDER LOOP ANT.	1	E6	

NO.	PARTS NO.	DESCRIPTION	Q'TY	POSITION	REMARK
69	4438100410	JACK RCA(4P)	1	D6	
70	6505064010	BKT HEAT SINK	1	D4	
80	8119226081	SCREW #2PT2.6×8Y	14	C3, C4	
81	8119230101	SCREW #2 PTC 3×8B	7	D6, E5	
83	8109230081	SCREW #2 BTC 3×8Y	4	D4, E2	
84	8109230161	SCREW #2 BTC 3×16Y	1	C3	
85	8159230081	SCREW #2 WPTC 3×8Y	6	A4, C4, E4	
86	8159230101	SCREW #2 WPTC 3×10Y	2	C5	
87	8119330063	SCREW #3 PTC 3×6B	5	D6, E5, F4	
89	8109330081	SCREW #3 PTC 3×8Y	18	B4, B6	
				C2, E4	
91	8059130161	SCREW HEX M3×16Y	2	D4	
92	8119430081	SCREW SAM 3×8Y	1		
93	8069140081	SCREW WPM 4×10Y	4	E3	
94	8209540011	NUT FRANGE M4	4	E3	
95	8319130011	WASHER SPRING #3	2	D4	

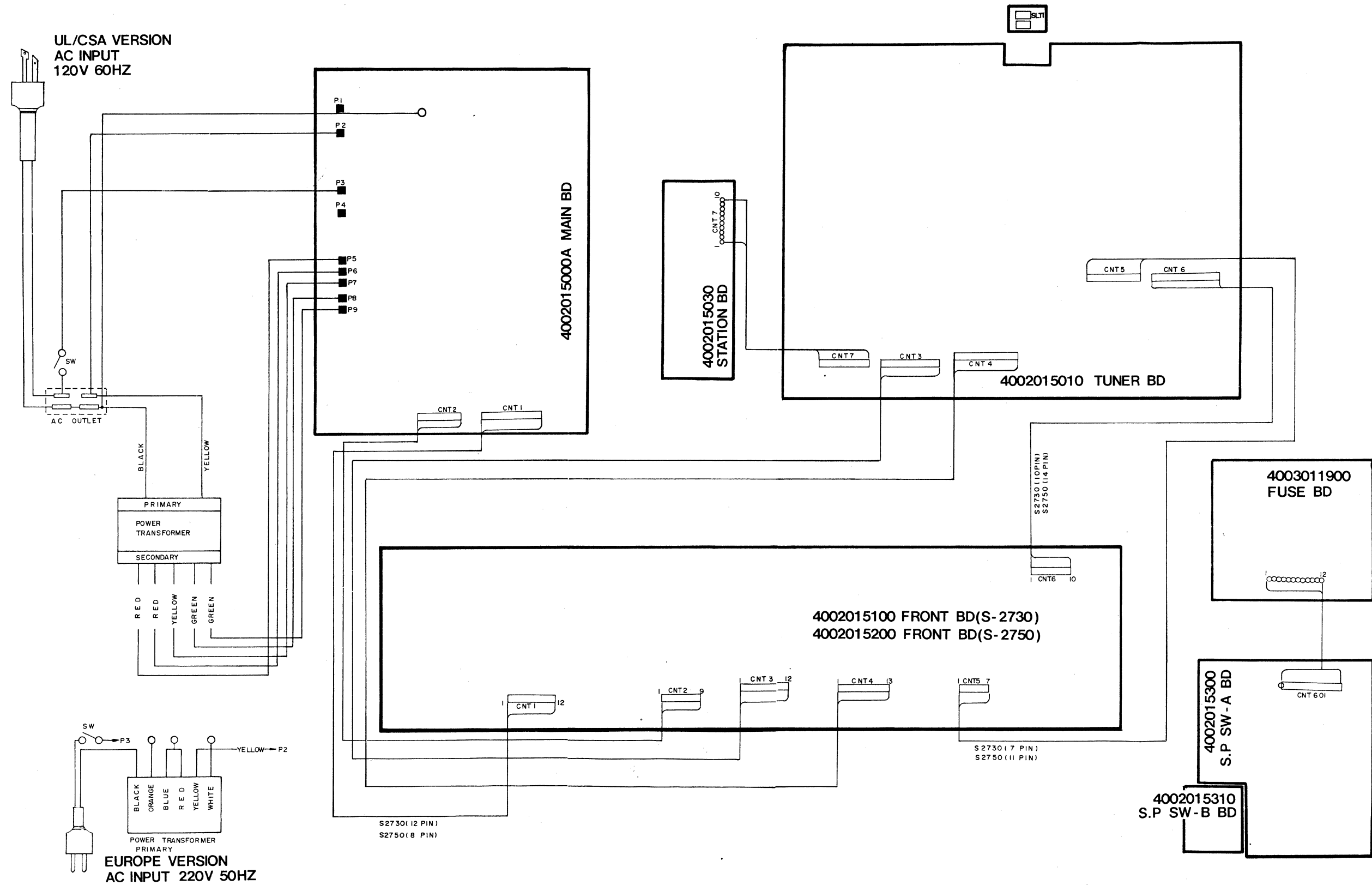


& Chassis

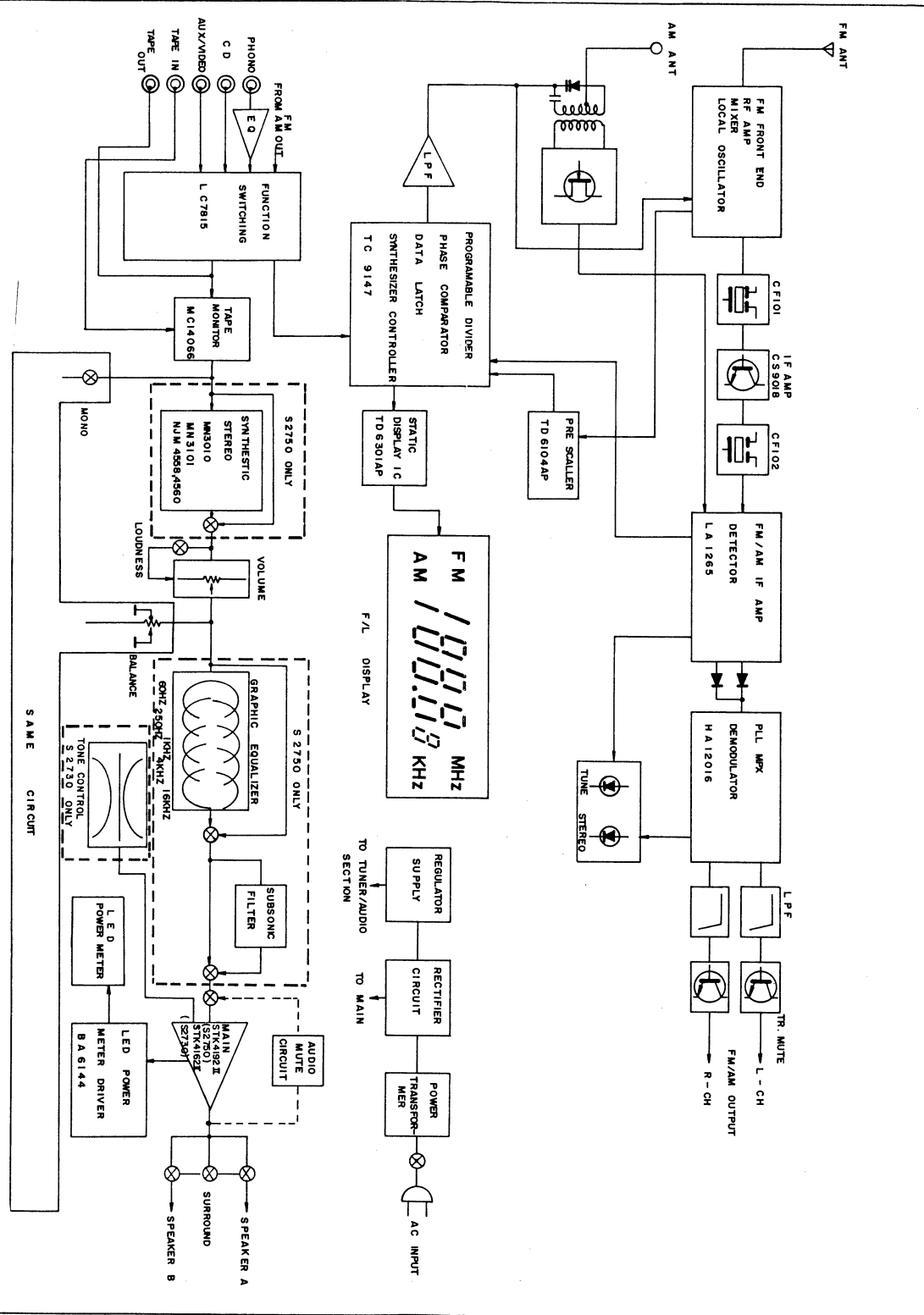
DESCRIPTION	QTY	POSITION	REMARK
JACK RCA(4P)	1	D6	
BKT HEAT SINK	1	D4	
SCREW #2PT2.6×8Y	14	C3,C4	
SCREW #2 PTC 3×8B	7	D6,E5	
SCREW #2 BTC 3×8Y	4	D4,E2	
SCREW #2 BTC 3×16Y	1	C3	
SCREW #2 WPTC 3×8Y	6	A4,C4,E4	
SCREW #2 WPTC 3×10Y	2	C5	
SCREW #3 PTC 3×6B	5	D6,E5,F4	
SCREW #3 PTC 3×8Y	18	B4,B6	
		C2,E4	
SCREW HEX M3×16Y	2	D4	
SCREW SAM 3×8Y	1		
SCREW WPM 4×10Y	4	E3	
NUT FRANGE M4	4	E3	
WASHER SPRING #3	2	D4	



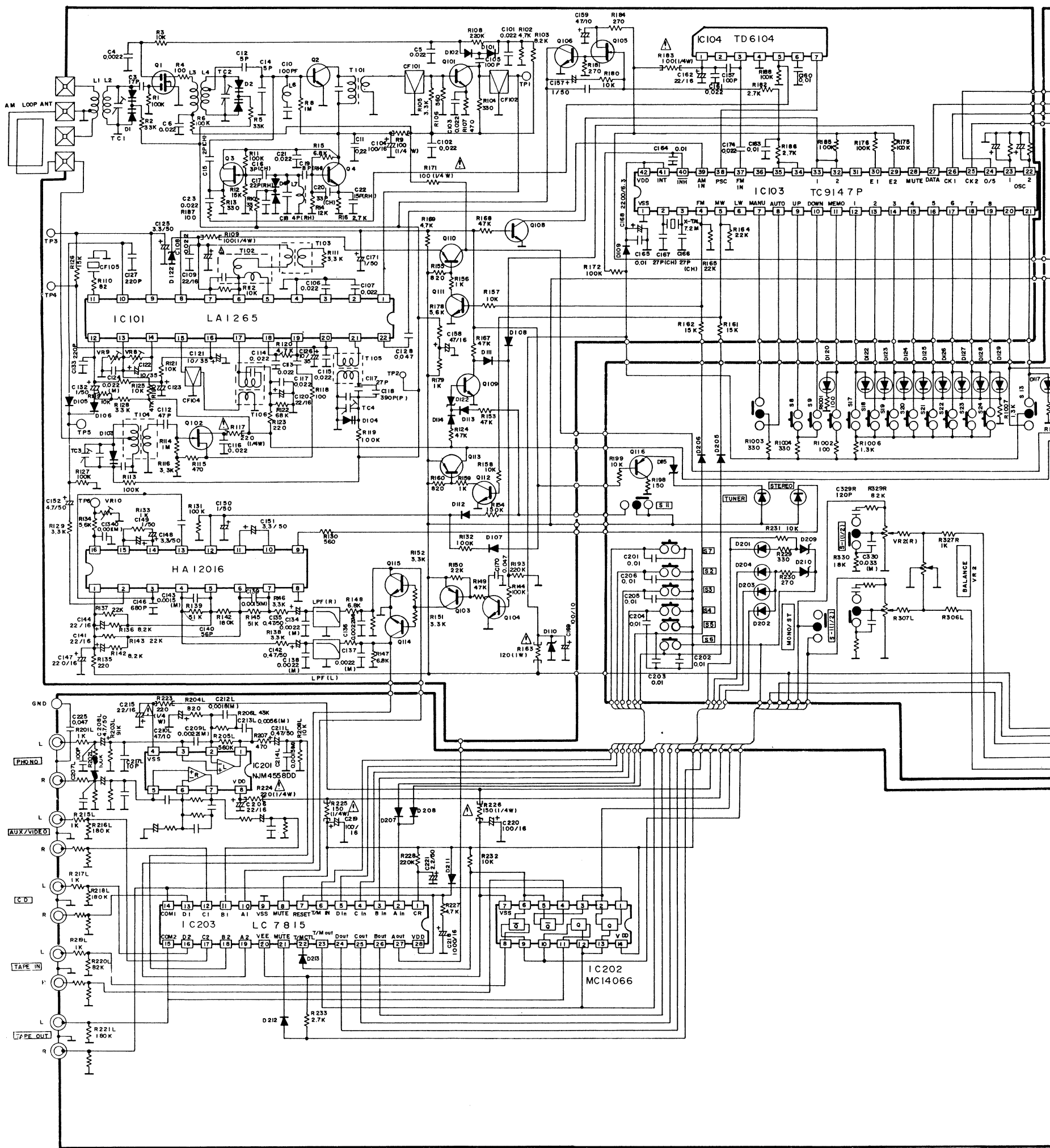
Point to Point Wiring Diagram



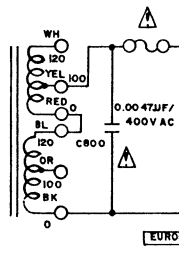
Block Diagram



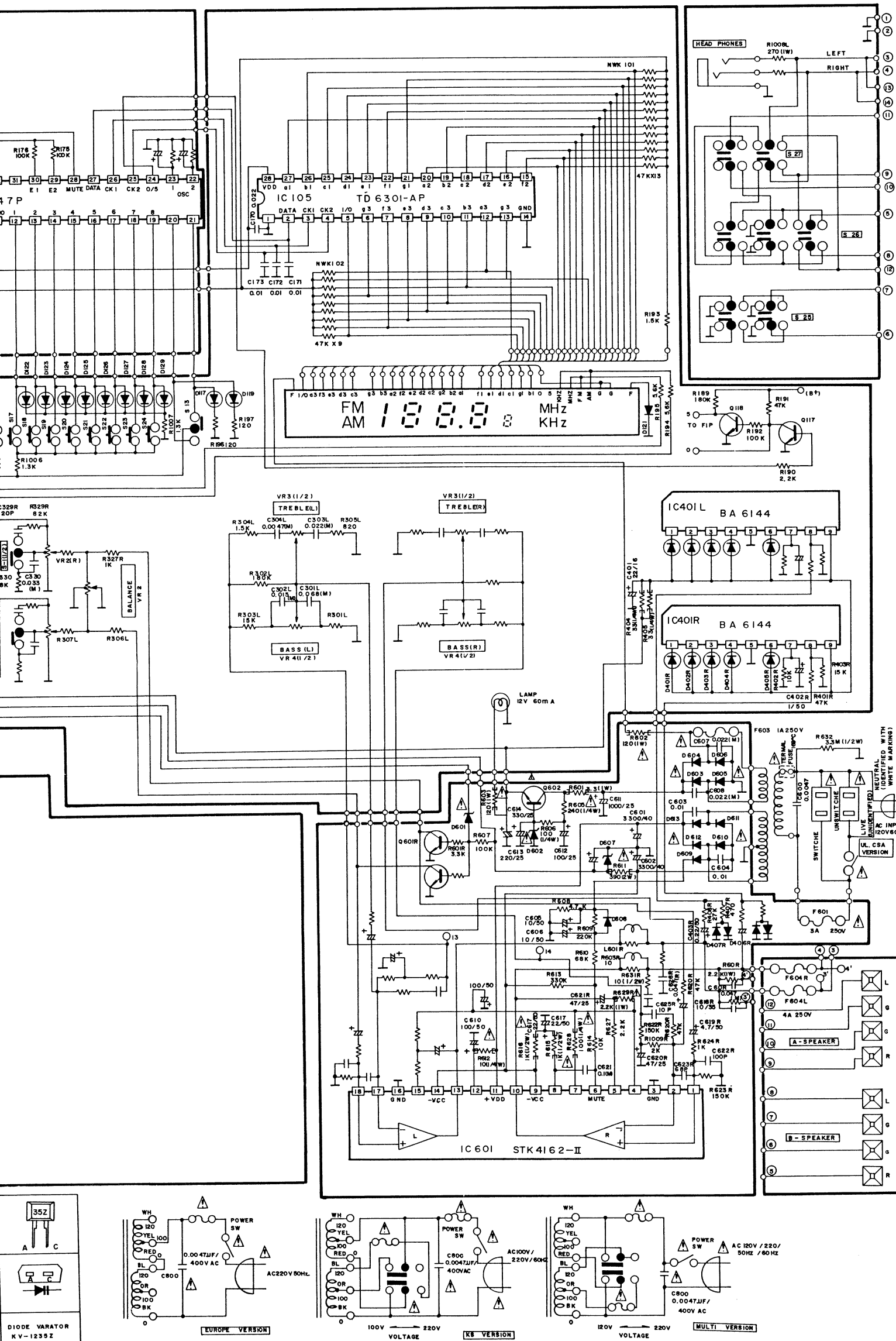
Schematic Diagram
S-2730



FRONT VIEW									
BOTTOM VIEW									
SEMICONDUCTOR NAME	TRANSISTOR KTC2240 2SC1923 KTA1015 KTC1915	TRANSISTOR 2SC2668	TRANSISTOR CS9018 - F	TRANSISTOR KTD880	MOS - FET 3SK-74L	FET 2SK161	FET 2SK168	DIODE VARACTOR KV1310 - A	DIODE VARACTOR KV-1235Z



Schematic Diagram
S-2730

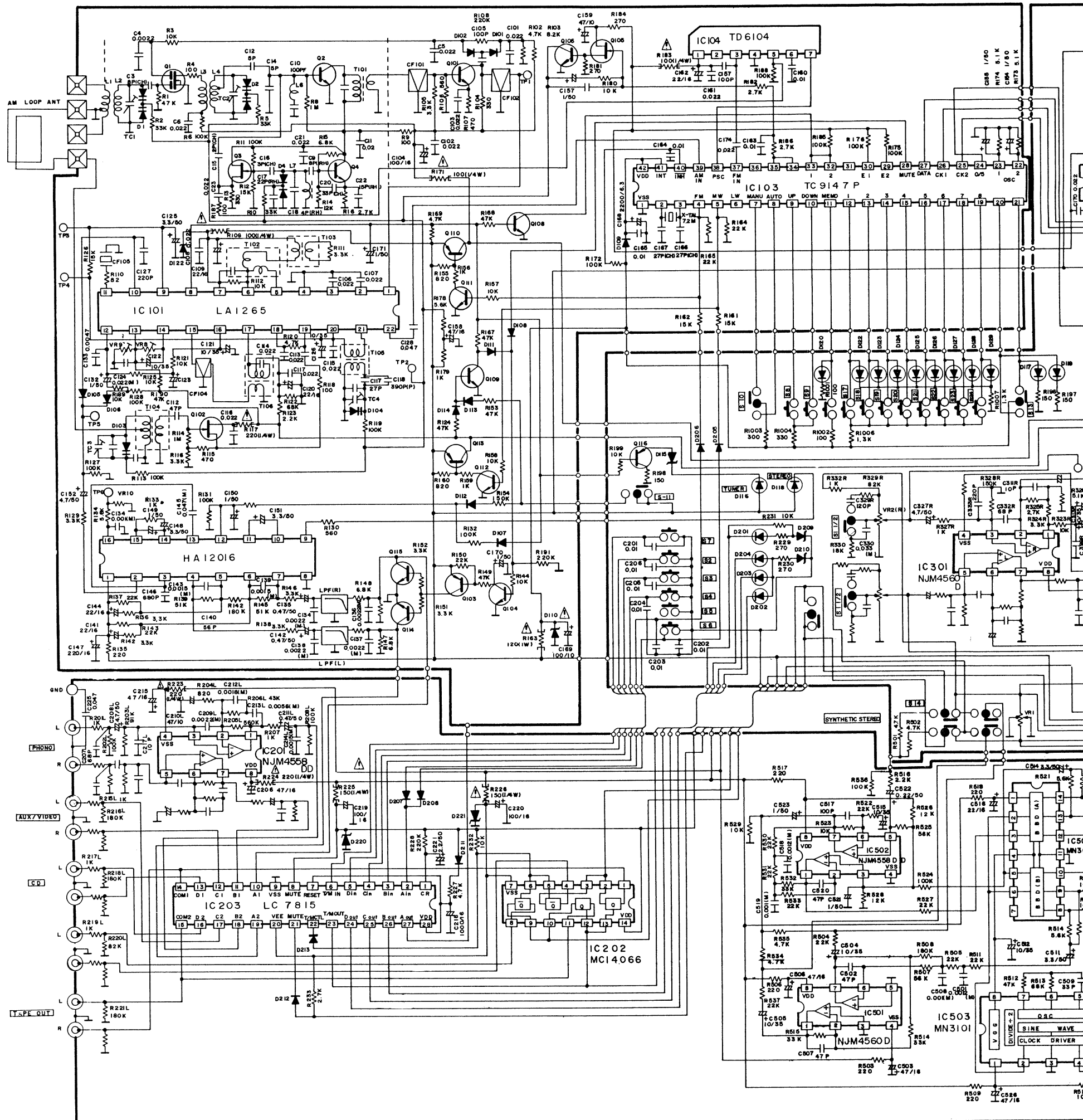


A

B

C

D

Schematic Diagram
S-2750

FRONT VIEW										
BOTTOM VIEW										
SEMICONDUCTOR NAME	TRANSISTOR KTC2240 2SC1923 KTA1015 KTC1815	TRANSISTOR 2SC2668	TRANSISTOR CS9018-F	TRANSISTOR KTD680	MOS-FET 3SK-74L	FET 2SK161	FET 2SK168	DIODE VARACTOR KV1310-A	DIODE VARACTOR KV-1235Z	

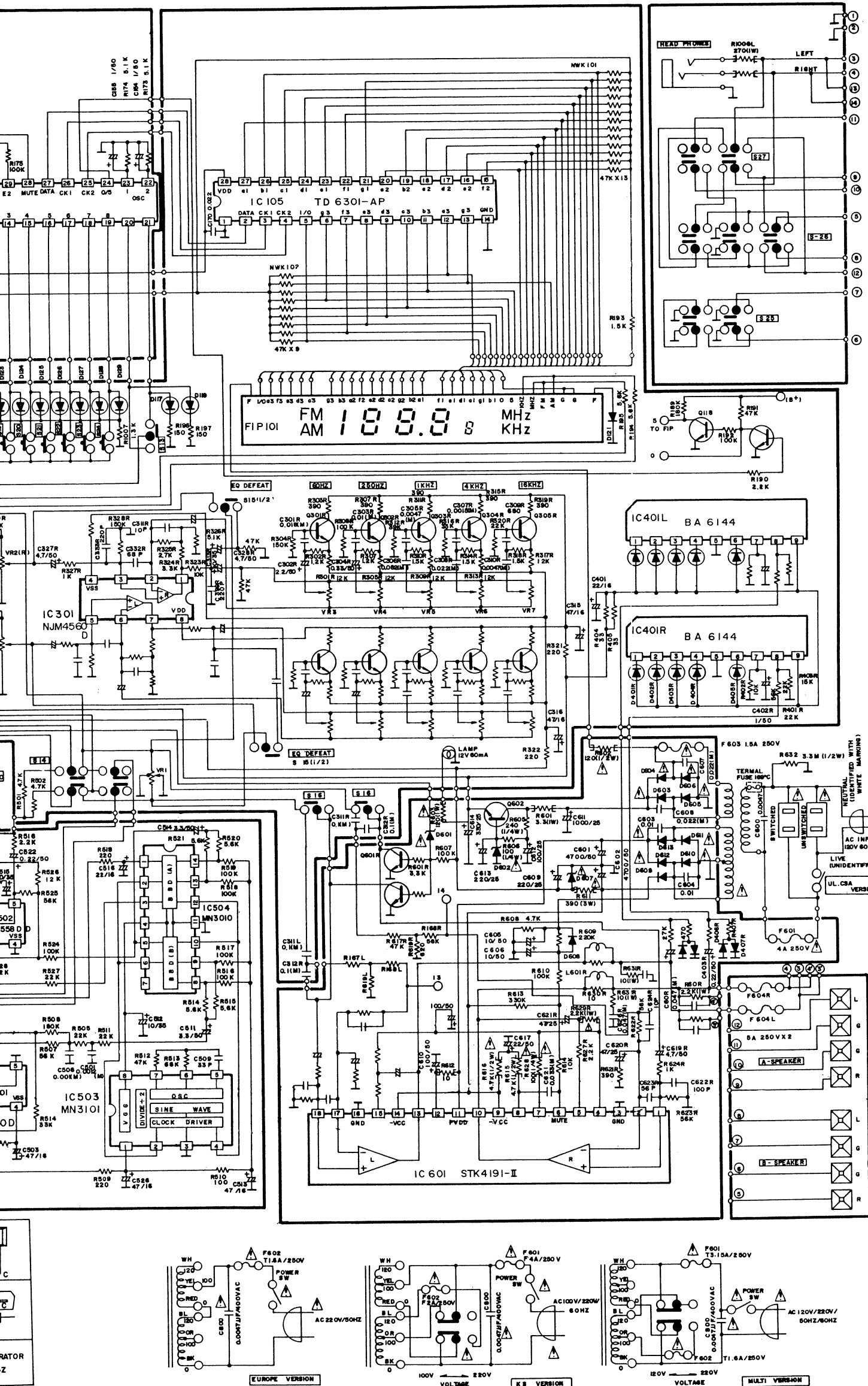
A

B

C

D

Schematic Diagram S-2750



SYMBOL NO	DESCRIPTION/USE	SYMBOL NO	DESCRIPTION/USE
CF101-103	FILTER 10.7MA8	S1	SWITCH LOUDNESS
CF104	FILTER 8PF 480H	S2	SWITCH PHONO
CF105	FILTER 8PF 480C4H	S3	SWITCH AUX/VIDEO
D1-D4	VARACTOR KV1310A	S4	SWITCH CD
D101-D102	1N60	S5	SWITCH FM
D103-D104	VARACTOR KV1235Z	S6	SWITCH AM
D105-D106	1N4148	S7	SWITCH MONITOR
D110	DIODE ZENER RD6.8E82	S8	SWITCH UP
D111-D114	1N4148	S9	SWITCH DOWN
D115	DIODE ZENER RD6.8E82	S10	SWITCH MANUAL AUTO
D116	LED SLV-56MCS	S11	SWITCH MONO/STEREO
D117-D120	LED SLV-56DCS	S12	SWITCH MEMORY
D121	1N4148	S13	SWITCH SHIFT
D122-D129	LED SLV-34URC3	S14	SWITCH SYNTHETIC ST. RES
D201	LED SLV-56DCS	S15	SWITCH EQ OFF/LAT
D202-D204	LED SLV-56MCS	S16	SWITCH SUBSONIC FREQ
D205-D208	1N4148	S17-S24	SWITCH STATION 1-7
D209-D210	DIODE ZENER RD6.8E82	S25	SWITCH FUNKHOLD
D211-D213	1N4148	S26	SWITCH SPEAKER-B
D122	DIODE ZENER RD1.8E83	S27	SWITCH SPEAKER-A
L1	COIL ANT-A	S28	SWITCH MAIN POWER
L2	COIL ANT-B		
L3	COIL RF-A		
L4	COIL RF-B	T101	IFT FM
L5	COIL RF(4)	T102	DET-A FM
L6	COIL 2.2MH	T103	DET-B FM
L7	FM OSC	T104	RF AM
L801LR	0.5MH	T105	OSC AM
		T106	IFT AM
Q1	FET 3SK74L		
Q2	TR 2SC2668-R	TC1-2	TRIMMER T10F
Q3	FET 2SK181	TC3-4	TRIMMER T20F
Q4	TR 2SC1923		
Q101	TR C8018-F		
Q102	FET 2SK192	VR1	BALANCE IM-W
Q103	TR KTA1015	VR2	VOLUME 250K-A
Q104	TR KTC1815	VR3-VR7	EQ100K-B
Q105	FET 2SK168	VR8	AM ADJ 10K-B
Q106	TR KTC2240	VR9	FM ADJ 10K-B
Q107		VR10	VCO ADJ 3K-B
Q108-Q109	TR KTC1815		
Q110	TR KTA1015		
Q111-Q112	TR KTC1815		
Q113	TR KTA1015	D605-D606	1N5402
Q114-Q115	TR KTC1815	D607-D608	1N4002
Q116	TR KTA1015	D609-D610	1N4002
Q117-Q118	TR KTC1815	D602	DIODE ZENER RD1.8E82
		D607	DIODE ZENER RD1.8E82
		D601	DIODE ZENER RD6.8E82
Q301LR-	TR KTC1815	D608	1N4148
Q305LR	TR KTC1815		
Q601LR	TR KTC1815		
Q602	TR KTD880		

SERVICE INFORMATION

- RESISTANCE VALUES ARE INDICATED IN OHMS OTHERWISE SPECIFIED.
(K=1,000 M=1,000,000)
- CAPACITANCE VALUES ARE SHOWN IN MICROFARADS UNLESS OTHERWISE NOTED.
(P=PICTO-MICROFARADS)
- COMPONENT VALUES ARE SUBJECT TO CHANGE WITHOUT NOTICES.
- ALL VOLTAGES ARE REFERENCED TO GROUND UNDER THE FOLLOWING CONDITION:
D.C. NO SIGNAL EXCEPT WHERE INDICATED
A.C. R.M.S.
□ 5mV/M AM SIGNAL INPUT, 30% MODULATION AT 400HZ
□ 2mV/M FM SIGNAL INPUT STEREO OR MONO EXCEPT WHERE INDICATED
MONO-L/R 75KHZ DEVIATION AT 1KHZ
STEREO-L/R 87.5KHZ DEVIATION, PILOT 7.5KHZ DEVIATION AT 1KHZ
(1) A.C. (AT 100HZ, 8 OHMS LOAD FULL SIGNAL)
- PRECAUTIONS:
A) ALL REPLACEMENT COMPONENTS IDENTIFIED BY Δ MUST BE REPLACED ONLY WITH ORIGINAL TYPE SPECIFIED BY MANUFACTURER, AND INSTALLED AS THE ORIGINAL, WITH SPACER AND POSITIONED AWAY FROM ADJACENT COMPONENTS WHERE APPLICABLE.
B) ALL SOLDERING MUST BE DONE IN A PROFESSIONAL MANNER USING SOLDER WITH ROBIN CORE ONLY.
C) ALL COVERS, SHIELDS AND INSULATING SPACERS MUST BE REPLACED BEFORE RETURNING APPLIANCE TO CUSTOMER.
D) A DAMAGED POWER SUPPLY CORD MUST BE REPLACED BEFORE RETURNING APPLIANCE TO CUSTOMER.
E) A DIELECTRIC TEST CONSISTING OF 100V A.C. 60HZ IS TO BE APPLIED BETWEEN BOTH BLADES OF THE POWER SUPPLY CORD ATTACHMENT PLUG AND THE EXPOSED CONDUCTIVE SURFACE OF THE APPLIANCE FOR A PERIOD OF NOT LESS THAN 30 SECONDS BEFORE RETURNING APPLIANCE TO CUSTOMER.
F) THE 3-WATT MARKED RESISTORS ARE MOUNTED ABOVE THE P.C.B. ON SLEEVES.

